WHAT I CLAIM IS:

1. An inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1.

2. The binder of claim 1, in which the calcium silicate sites act as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.6 :1 and 6 :1.

3. The binder of claim 1, in which substantially all calcium silicate sites are bound the one to the other by alumina-silica phosphate bonds.

4. The binder of claim 1, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds is greater than 1.

5. The binder of claim 1, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds is greater than 1.5.

6. The binder of claim 1, in which the calcium silicate sites are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1.

7. The binder of claim 1, in which the calcium silicate sites are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 3/1 to 20/1.

8. The binder of claim 1, in which the calcium silicate sites are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1, the calcium meta silicate sites having an average length from 10μm to 10mm.

9. The binder of claim 1, in which the calcium silicate sites are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1, the calcium meta silicate sites having an average length from 50μm to 5 mm.

10. The binder of anyone of the claims 1, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds is comprised between 0.1 and 1.1.

11. The binder of anyone of the claims 1, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds is comprised between 0.3 and 0.9.

12. The binder of anyone of the claims 1, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds is comprised between 0.4 and 0.7.

13. A composition comprising at least :
an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1, and
a filler.

14. The composition of claim 13, in which the calcium silicate sites of the inorganic binder act as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.6 :1 and 6 :1.

15. The composition of claim 13, in which substantially all calcium silicate sites of the inorganic binder are bound the one to the other by alumina-silica phosphate bonds.

16. The composition of claim 13, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds of the inorganic binder is greater than 1.

17. The composition of claim 13, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds of the inorganic binder is greater than 1.5.

18. The composition of claim 13, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1.

19. The composition of claim 13, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 3/1 to 20/1.

20. The composition of claim 13, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1, the calcium meta silicate sites having an average length from 10μm to 10mm.

21. The composition of claim 13, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1, the calcium meta silicate sites having an average length from 50μm to 5 mm.

22. The composition of claim 13, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.1 and 1.1.

23. The composition of claim 13, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.3 and 0.9.

24. The composition of claim 13, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.4 and 0.7.

25. The composition of claim 13, in which the filler is a silicon containing filler.

26. The composition of claim 13, in which the filler comprises silicon containing fibers with a length of less than 1000μm.

27. The composition of claim 13, which comprises silicon containing fibers with a length of less than 1000μm, the weight content of silicon containing fibers with a length of less than 1000μm in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

28. A composition comprising at least :

an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1, and

silicon containing fibers with a length of less than 1000μm, the weight content of silicon containing fibers with a length of less than 1000μm in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

29. The composition of claim 28, which comprises silicon containing fibers with an average (in weight) length of less than 500μm, the weight content of silicon containing fibers with an average length of less than 500μm in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

30. The composition of claim 28, which comprises silicon containing fibers with an average (in weight) length of more than 10μm.

31. The composition of claim 28, which comprises silicon containing fibers with an average (in weight) length of more than 20μm.

32. The composition of claim 28, which comprises silicon containing fibers with an average (in weight) length comprised between 25μm and 300μm.

33. The composition of claim 28, which comprises silicon containing fibers with an average (in weight) length between 50μm and 250μm.

34. The composition of claim 28, in which the silicon containing fibers with a length of less than 1000μm are substantially not reactive with the binder.

35. The composition of claim 28, in which the silicon containing fibers with a length of less than 500μm are substantially not reactive with the binder.

36. The composition of claim 28, in which the silicon containing fibers with a length of less than 1000μm are not reactive with the binder.

37. The composition of claim 28, in which the silicon containing fibers with a length of less than 500μm are not reactive with the binder.

38. The composition of claim 28, which, after hardening and removal of free water, comprises from 1% up to 85% by weight, silicon containing fibers with a length of less than 1000μm, which are substantially not reactive with the binder.

39. The composition of claim 28, which, after hardening and removal of free water, comprises from 1% up to 85% by weight, silicon containing fibers with a length of less than 1000μm, which are not reactive with the binder.

40. The composition of claim 28, which, after hardening and removal of free water, comprises from 2% up to 75% by weight, silicon containing fibers with a length of less than 1000μm, which are not reactive with the binder.

41. The composition of claim 28, which, after hardening and removal of free water, comprises from 1% up to 85% by weight, silicon containing fibers with a length of less than 500μm, which are not reactive with the binder.

42. The composition of claim 28, which, after hardening and removal of free water, comprises from 2% up to 75% by weight, silicon containing fibers with a length of less than 500μm, which are not reactive with the binder.

43. The composition of claim 28, which, after hardening and removal of free water, comprises from 20% up to 65% by weight silicon containing fibers with a length of less than 1000μm which are substantially not reactive with the binder.

44. The composition of claim 28, which, after hardening and removal of free water, comprises from 30% up to 60% by weight silicon containing fibers with a length of less than 500μm, which are not reactive with the binder.

45. The composition of claim 28, which further comprises silica flour with a particle size of less than 500μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

45. The composition of claim 28, which further comprises silica flour with a particle size of less comprised between 2 and 400μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

46. The composition of claim 28, which further comprises silica flour with an average (in weight) particle size comprised between 2 and 100μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 1 and 10%.

47. The composition of claim 28, which further comprises silica flour with an average (in weight) particle size comprised between 2 and 100μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

48. The composition of claim 28, which further comprises silica flour with an average (in weight) particle size comprised between 5 and 60μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

49. The composition of claim 28, which further comprises silica flour with an average (in weight) particle size comprised between 10 and 50μm the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

50. The composition of claim 28, which further comprises crystallized alumina silicate particles which are substantially not reactive with the binder and which have an average (in weight) particle size comprised between 5 and 100μm, the weight content of non reactive crystallized alumina silicate in the composition after

its hardening and after removal of the possible free water being comprised between 1 and 10%.

51. The composition of claim 28, which further comprises crystallized alumina silicate particles which are substantially not reactive with the binder and which have an average (in weight) particle size comprised between 5 and 100μm, the weight content of non reactive crystallized alumina silicate in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

52. The composition of claim 28, in which the calcium silicate sites of the inorganic binder act as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.6 :1 and 6 :1.

53. The composition of claim 28, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds of the inorganic binder is greater than 1.

54. The composition of claim 28, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds of the inorganic binder is greater than 1.5.

55. The composition of claim 28, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1.

56. The composition of claim 28, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 3/1 to 20/1.

57. The composition of claim 55, in which the calcium meta silicate sites has an average length from 10μm to 10mm.

58. The composition of claim 56, in which the calcium meta silicate sites has an average length from 50μm to 5 mm.

59. The composition of claim 28, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.1 and 1.1.

60. The composition of claim 28, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.3 and 0.9.

61. The composition of claim 28, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.4 and 0.7.

62. A product comprising at least a hardened layer comprising an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1.

63. the product of claim 62, in which the layer further comprises at least a filler.

64. The product of claim 62, in which the hardened layer covers at least partly a face of a support element.

65. The product of claim 62, in which the hardened layer covers at least partly a face of a support comprising a core which can be subjected to a water swelling, and in which at least partly a face not covered by hardened layer is provided with a water repellent coating.

66. The product of claim 65, in which the water repellent coating is a silicon containing water repellent coating.

67. The product of claim 66, in which the water repellent coating is a fluoro silicon coating.

68. The product of claim 62, in which the hardened layer covers at least partly a face of a support comprising a core which can be subjected to a water swelling, and in which the faces not with a hardened layer are provided with a water repellent coating.

69. The product of claim 68, in which the water repellent coating is a silicon containing water repellent coating.

70. The product of claim 62, in which the hardened layer covers at least partly a face of a support comprising a core which can be subjected to a water swelling, said face being provided with a water repellent coating.

71. The product of claim 62, in which the hardened layer comprises at least :
an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1, and
silicon containing fibers with a length of less than 1000μm, the weight content of silicon containing fibers with a length of less than 1000μm in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

72. The product of claim 71, which comprises silicon containing fibers with an average (in weight) length of less than 500μm, the weight content of silicon containing fibers with an average length of less than 500μm in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

73. The product of claim 62, in which the hardened layer comprises silicon containing fibers with an average (in weight) length of more than 10μm.

74. The product of claim 62, in which the hardened layer comprises silicon containing fibers with an average (in weight) length of more than 20μm.

75. The product of claim 62, in which the hardened layer comprises silicon containing fibers with an average (in weight) length comprised between 25μm and 300μm.

76. The product of claim 62, in which the hardened layer comprises silicon containing fibers with an average (in weight) length between 50μm and 250μm.

77. The product of claim 62, in which the hardened layer comprises silicon containing fibers with a length of less than 1000μm which are substantially not reactive with the binder.

78. The product of claim 62, in which the hardened layer comprises silicon containing fibers with a length of less than 500μm which are substantially not reactive with the binder.

79. The product of claim 62, in which the hardened layer comprises silicon containing fibers with a length of less than 1000μm, which are not reactive with the binder.

80. The product of claim 62, in which the hardened layer comprises silicon containing fibers with a length of less than 500μm which are not reactive with the binder.

81. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 1% up to 85% by weight, silicon containing fibers with a length of less than 1000μm, which are substantially not reactive with the binder.

82. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 1% up to 85% by weight, silicon containing fibers with a length of less than 1000μm, which are not reactive with the binder.

83. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 2% up to 75% by weight, silicon containing fibers with a length of less than 1000μm, which are not reactive with the binder.

84. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 1% up to 85% by weight, silicon containing fibers with a length of less than 500μm, which are not reactive with the binder.

85. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 2% up to 75% by weight, silicon containing fibers with a length of less than 500μm, which are not reactive with the binder.

86. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 20% up to 65% by weight silicon containing fibers with a length of less than 1000μm which are substantially not reactive with the binder.

87. The product of claim 62, in which, after hardening and removal of free water, the hardened layer comprises from 30% up to 60% by weight silicon containing fibers with a length of less than 500μm, which are not reactive with the binder.

88. The product of claim 62, in which the hardened layer further comprises silica flour with a particle size of less than 500μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

89. The product of claim 62, in which the hardened layer further comprises silica flour with a particle size of less comprised between 2 and 400μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

90. The product of claim 62, in which the hardened layer further comprises silica flour with an average (in weight) particle size comprised between 2 and 100μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 1 and 10%.

91. The product of claim 62, in which the hardened layer further comprises silica flour with an average (in weight) particle size comprised between 2 and 100μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

92. The product of claim 62, in which the hardened layer further comprises silica flour with an average (in weight) particle size comprised between 5 and 60μm, the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

93. The product of claim 62, in which the hardened layer further comprises silica flour with an average (in weight) particle size comprised between 10 and 50μm the weight content of silica flour in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

94. The product of claim 62, in which the hardened layer further comprises crystallized alumina silicate particles which are substantially not reactive with the binder and which have an average (in weight) particle size comprised between 5 and 100μm, the weight content of non reactive crystallized alumina silicate in the composition after its hardening and after removal of the possible free water being comprised between 1 and 10%.

95. The product of claim 62, in which the hardened layer further comprises crystallized alumina silicate particles which are substantially not reactive with the binder and which have an average (in weight) particle size comprised between 5 and 100μm, the weight content of non reactive crystallized alumina silicate in the composition after its hardening and after removal of the possible free water being comprised between 2 and 8%.

96. The product of claim 62, in which the calcium silicate sites of the inorganic binder act as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.6 :1 and 6 :1.

97. The product of claim 62, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds of the inorganic binder is greater than 1.

98. The product of claim 62, in which the weight ratio calcium silicate site / SiO_2 present in the alumina-silica phosphate bonds of the inorganic binder is greater than 1.5.

99. The product of claim 62, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1.

100. The product of claim 62, in which the calcium silicate sites of the inorganic binder are calcium meta silicate sites having a substantially acicular nature with a length/diameter ratio from 3/1 to 20/1.

101. The product of claim 99, in which the calcium meta silicate sites has an average length from 10μm to 10mm.

102. The product of claim 100, in which the calcium meta silicate sites has an average length from 50μm to 5 mm.

103. The product of claim 62, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.1 and 1.1.

104. The product of claim 62, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.3 and 0.9.

105. The product of claim 62, in which the weight ratio calcium silicate sites/alumina-silica phosphate bonds of the inorganic binder is comprised between 0.4 and 0.7.

106. A kit for the preparation of an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1,
said kit comprising :

a container containing a water insoluble calcium silicate, and
at least one container containing at least one compound suitable for preparing an acid alumina-silica phosphate solution, in which the silica is solubilized .

107. The kit of claim 106, which comprises at least a container containing at least one acid suitable for preparing an acid alumina-silica phosphate solution with a pH lower than 1.5 measured at 20°C.

108. The kit of claim 106, which comprises at least a container containing at least one acid suitable for preparing an acid alumina-silica phosphate solution with a pH lower than 1 measured at 20°C.

109. The kit of claim 106, in which the container containing a water insoluble calcium silicate further contains silicon containing fibers with a length of less than 1000μm.

110. The kit of claim 106, in which the container containing a water insoluble calcium silicate further contains silica flour with an average particle size of less than 500μm.

111. A kit for the preparation of an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1,
said kit comprising :

a container containing a water insoluble calcium silicate, and
at least one container containing at least an acid alumina-silica phosphate solution, in which the silica is solubilized .

112. The kit of claim 111, which comprises at least one container containing at least an acid alumina-silica phosphate solution with a pH lower than 1.5 measured at 20°C.

113. The kit of claim 111, which comprises at least one container containing at least an acid alumina-silica phosphate solution with a pH lower than 1 measured at 20°C.

114. The kit of claim 111, in which the container containing a water insoluble calcium silicate further contains silicon containing fibers with a length of less than 1000μm.

115. The kit of claim 111, in which the container containing a water insoluble calcium silicate further contains silica flour with an average particle size of less than 500μm.

116. A process for the preparation of an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1, in which water insoluble calcium silicate particles are mixed with an acid alumina-silica phosphate solution at a temperature lower than 50°C, said acid alumina-silica phosphate solution comprising solubilized SiO2 and having a pH of less than 2, , said alumina-silica phosphate solution having a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1.

117. The process of claim 116, in which water insoluble calcium silicate particles are mixed with an acid alumina-silica phosphate solution at a temperature lower than 50°C, said acid alumina-silica phosphate solution comprising solubilized SiO2 and having a pH of less than 1.5, said alumina-silica phosphate solution having a weight ratio Al_2O_3/SiO_2 ranging from 0.6 :1 and 6 :1.

118. The process of claim 116, in which water insoluble calcium silicate particles are mixed with an acid alumina-silica phosphate solution at a temperature lower than 50°C, said acid alumina-silica phosphate solution comprising solubilized SiO2 and having a pH comprised between 0.5 and 1.5, said alumina-silica phosphate solution having a weight ratio Al_2O_3/SiO_2 ranging from 0.6 :1 and 6 :1.

119. The process of claim 116, in which the weight ratio water insoluble calcium silicate particles / solubilized SiO_2 present in the alumina-silica phosphate solution is greater than 1.

120. The process of claim 116, in which the weight ratio water insoluble calcium silicate particles / solubilized SiO_2 present in the alumina-silica phosphate solution is greater than 1.5.

121. The process of claim 116, in which the calcium silicate particles are calcium meta silicate particles having a substantially acicular nature with a length/diameter ratio from 2/1 to 50/1.

122. The process of claim 116, in which the calcium silicate particles are calcium meta silicate particles having a substantially acicular nature with a length/diameter ratio from 3/1 to 20/1.

123. The process of claim 121, in which the calcium meta silicate particles have an average length from 10μm to 10mm.

124. The process of claim 122, in which the calcium meta silicate particles have an average length from 50μm to 5 mm.

125. The process of claim 116, in which the calcium silicate particles act as cross-linking sites for alumina-silica phosphate bonds.

126. The process of claim 116, in which the weight ratio calcium silicate particles/alumina-silica phosphate solution is comprised between 0.1 and 1.1.

127. The process of claim 116, in which a filler is mixed with the calcium silicate particles before being mixed with the acid alumina-silica phosphate solution.

128. The process of claim 116, in which a filler is mixed to the mixture calcium silicate/alumina - silica phosphate solution, before its hardening.

129. The process of claim 116, in which the hardening of the binder is carried out at a temperature comprised between 0°C and 50°C.

130. The process of claim 116, in which the binder is hardened under pressure.

131. The process of claim 116, in which the amount of calcium silicate added to the acid silica alumina phosphate solution is such that the weight ratio calcium silicate / SiO_2 present in the acid solution is comprised between 1 and 5.

132. The process of claim 116, in which the amount of calcium silicate added to the acid silica alumina phosphate solution is such that the weight ratio calcium silicate / SiO_2 present in the acid solution is comprised between 1.5 and 3.5.

133. The process of claim 116, in which the amount of calcium silicate added to the acid silica alumina phosphate solution is such that the weight ratio calcium silicate / SiO_2 present in the acid solution is greater than 2.

134. The process of claim 116, in which the acid silica alumina phosphate solution is prepared by mixing a silica - alumina mixture with an acid consisting substantially only of phosphoric acid.

135. The process of claim 134, in which further silica and alumina is added to the formed acid solution.

136. The process of claim 116, in which the acid silica alumina phosphate solution is prepared by mixing silica particles with an acid consisting substantially only of phosphoric acid, and by mixing thereafter to the silica containing solution alumina particles.

137. The process of claim 116, in which the acid silica alumina phosphate solution is prepared by mixing alumina particles with an acid consisting substantially only of phosphoric acid, and by mixing thereafter to the alumina containing solution silica particles.

138. The process of claim 116, in which the acid silica alumina phosphate solution is prepared at least by mixing precipitated silica with an acid solution with a pH lower than 1.5.

139. The process of claim 116, in which inert silicon containing fibers with a length of less than 1000μm are mixed to the mixture calcium silicate/alumina - silica phosphate solution, before its complete hardening.

140. The process of claim 116, in which inert silicon containing fibers with a length of less than 1000μm are mixed to the alumina - silica phosphate solution before the adding of water insoluble calcium silicate particles.

141. The process of claim 116, in which inert silicon containing fibers with a length of less than 1000μm and water insoluble calcium silicate particles are added together to the alumina - silica phosphate solution.

142. A process for the manufacture of a product comprising a support provided with at least a hardened layer comprising an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1,
in which at least partly a face of the support is contacted with a composition before its complete hardening, whereby said composition comprising at least :
an inorganic binder having calcium silicate sites which are connected the one with the other by alumina-silica phosphate bonds, the calcium silicate sites acting as cross-linking sites for the alumina-silica phosphate bonds with a weight ratio Al_2O_3/SiO_2 ranging from 0.3 :1 and 10 :1, and
a filler, and
in which the composition is hardened on said support.

143. The process of claim 142, in which the composition contacting the support comprises silicon containing fibers with a length of less than 1000μm, the weight content of silicon containing fibers with a length of less than 1000μm in the composition after its hardening and after removal of the possible free water being of at least 0.5%.

144. The process of claim 142, in which at least a portion of a face of the support not contacted with the composition is provided with a water repellent coating.

145. The process of claim 144, in which the water repellent coating is a fluoro silicon coating.

146. The process of claim 142, in which at least one face of the support intended to be not contacted with the composition is provided with a water repellent coating.

147. The process of claim 146, in which at least partly a face of the support is provided with a water repellent coating prior contacting at least partly a face of the support with the composition.

148. The process of claim 142, in which at least a portion of a face adjacent to a portion of a face provided with a hardened layer are provided with a water repellent coating.